



Open Mind on Open Source

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IT “political” issues

1. Intellectual property

- Collective/collaborative vs. proprietary

2. Technical migration

- Continuous vs. discrete versioning

3. Robustness

- Peer review vs. trade secret source code

4. Enterprise scope

- independent branches vs. centrally governed
(AKA *city* or the *car*)

Is the State House open source?





Intellectual property

- Land part of John Hancock's pasture
- Charles Bulfinch, architect, original 1795 design
 - Charles Brigham, architect, 1895 extension
 - William Chapman, architect, 1917 addition
- Establishment of Massachusetts legislature in 1644
 - 1780 Constitution sets out three main branches
- Symbolism
 - Paul Revere, Grand Master of Masons, led groundbreaking on July 4, 1795
 - Cost \$133,333.33 (33rd degree is highest masonic degree)
 - Governor's office is perfect cube (symbol of masonic order)



collective/collaborative



Technical migration

- Original 1798 dome made of wood shingles
 - Replaced with copper top in 1802
 - Gilded dome in 1861
 - Painted black in WWII for security, latest gold renovation mid-1990s
- Foundation
 - Initial stone pulled by 15 white horses representing then-existing states
 - Multiple new basements added during past 200 years
- Expansions
 - Different materials and architects, but integrated with original building (more or less ... floor elevations don't quite match)



continuous versioning



Robustness

- Constitution mandates printed copies
 - Article XI. This form of government shall be enrolled on parchment and deposited in the secretary's office, and be a part of the laws of the land -- and printed copies thereof shall be prefixed to the book containing the laws of this commonwealth, in all future editions of the said laws.
- Public openness
 - Approximately 90,000 tourists annually, visitor's gallery in both House and Senate chambers
 - Designated press offices
- Defined lawmaking process with multiple reviews
 - Governor files bill => House reviews => Senate reviews => House/Senate consensus => Governor amends or vetoes => Legislature overrides



peer review source code




Enterprise scope

- Distinct branches within one governmental system
 - Clear architectural and symbolic separation
- Access to each other via public spaces
 - Common hallways underscore continuity and overall purpose
- Shared infrastructure, independent processes
 - Legislators enter through same doors, but act by chamber
- Shared data, independent analysis
 - Laws open to all, but executive, judiciary, and legislative branches apply and interpret differently



independent branches

System evolution

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- Proprietary and/or secret rules
 - Discrete versioning (edicts)
 - Closed deliberations
 - Centrally governed (single CEO or king)
- Collective and collaborative rules
 - Continuous versioning (amendments)
 - Peer review process
 - Independent branches in a federation

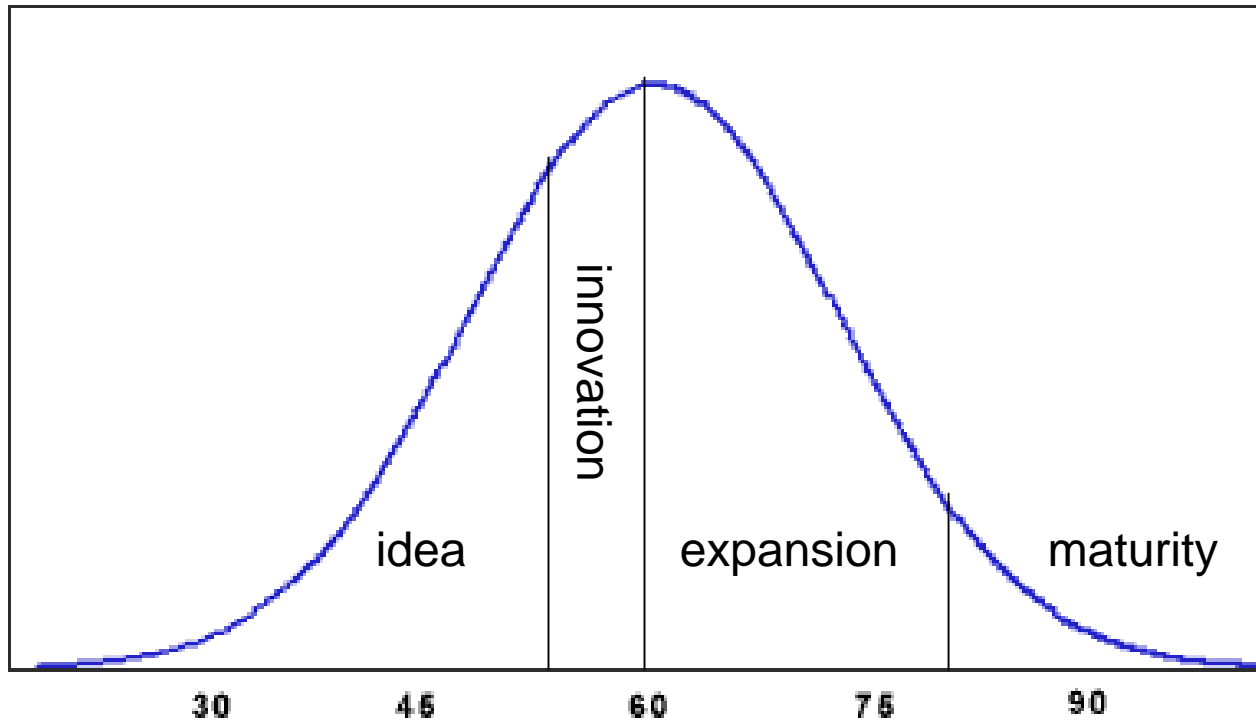
Railroads (1630 to 2005, or 375 years)

- **Idea** (50% of elapsed time)
 - 1630 wagon “rails” for horse-drawn carts
 - 1826 first horse-drawn rail in Quincy, Mass (3 miles)
- **Innovation** (10% of elapsed time)
 - 1827-33 many technical improvements in steam engines
- **Expansion** (20% of elapsed time)
 - 1862 President Lincoln signs *Pacific Railway Act* (first standards)
 - 1869 “Golden Spike” completes first transcontinental line
 - 1870-1930 Railroad Barons
- **Maturity** (20% of elapsed time)
 - 1930-1969 industry consolidation
 - 1970 Amtrak created by Congress

IT (1901 to 2005, or 104 years)

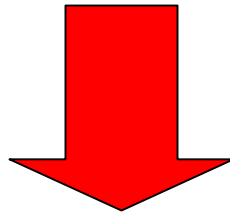
- **Idea** (50% of elapsed time)
 - 1901 first digital trans-Atlantic morse code signal
 - 1926 Tabulating Machine Company renamed IBM
- **Innovation** (10% of elapsed time)
 - 1951 UNIVAC I introduced, fortran language in 1954
 - 1957-59 DEC, Fairchild, Casio, Hitachi, Motorola, Panasonic, others founded
- **Expansion** (20% of elapsed time)
 - 1960 PDP 1 released, first real programmable computer
 - 1969 ARPANET established, later becomes today's Internet
 - 1978 Dan Bricklin creates VisiCalc
 - 1990 Windows 3.0 released
- **Maturity** (20% of elapsed time)
 - 1994 WWW Consortium founded

Evolution bell curve



Implications

- “Open source” is evidence that mature evolutionary phase has arrived
- Inevitable result of evolutionary process mirrored across all systems



Go with the flow

Next: The code bank

- Government “open source”
 - Members can “deposit” and “withdraw” code
 - All benefit from enhancements
 - Common standards
- June 28 launch
 - Massachusetts will deposit virus tracking, network monitoring applications; inmate management system later
 - Other participants include Kansas, Rhode Island, cities Newport News, VA and Gloucester, MA



S. GROSS